

## EXPANDABLE GUTTER BRACKET

### Cross Reference to Related Application

This application claims the benefit of U.S. Provisional Patent Application No. 60/485,663, filed July 8, 2003, the entirety of which is hereby incorporated by reference into this application.

### Background of the Invention

#### 1. Field of the Invention

The present invention relates to an expandable gutter bracket for expeditious attachment to existing installed gutters

#### 10 2. Description of Related Art

Spike and furrow methods have been used to attach gutters to a building surface. It has been found that the spike and furrow loosens up over time.

U.S. Patent No. 3,752,428 describes an adjustable gutter hanger assembly which can be used during installation of a gutter to the upper extremity of fascia or other building components immediately underlying the marginal edges of a roof structure. An adjustable gutter hanger assembly having first and second gutter hanger elements which are adjustably secured to each other and secure a gutter having its innermost vertical wall in spaced outward position with respect to the adjacent fascia or other building surface. The first gutter hanger element may have a body portion, a downwardly directed rear flange and an upwardly directed outer flange with reinforcing means being provided within the body and rear flange. The second gutter hanger element may have a reinforcing body portion and an upwardly open rearwardly disposed channel. The reinforcing means are preferably integrally formed hollow ribs. The downwardly directed flange does not project upwardly beyond the body portion of the first body element. The rearwardly disposed gutter receiving channel of the first or second body element has a mouth which is spaced below the plane of the body portion of this element. This facilitates relative movement of the element during gutter hanging and also assures the proper relationship between the upper portion of the inner gutter wall, the rear flange of the second gutter hanger element and the overlying gutter hanger element.

A hidden hanger bracket has been used as an attachment to further hold existing gutters. The hidden hanger bracket is typically sized to fit gutters of a particular size, such as five (5) and six (6) inch gutters. The hidden hanger bracket is often difficult to install into an existing gutter because of roof shingles that protrude into the gutter, 5 thereby making it difficult to maneuver the hidden hanger bracket into place. It is desirable to provide a hanger bracket that is adjustable, thereby allowing the bracket to be easily and expeditiously installed.

An example of a hidden hanger bracket is shown in U.S. Des. 383,966.

#### Summary of the Invention

10 The present invention relates to an expandable gutter bracket in which a length of the bracket is expanded after insertion into a previously installed gutter. The expandable gutter bracket comprises a two piece construction including, a gutter attachment section coupled to a building attachment section. The sections can be coupled together to provide sliding or pivotal movement between the sections. After the gutter bracket is 15 expanded, the building attachment section can be mounted to a building surface.

The invention will be more fully described by reference to the following drawings.

#### Brief Description of the Drawings

Fig. 1A is a schematic side view of a first section of an expandable gutter bracket 20 of the present invention.

Fig. 1B is a schematic side view of a second section of the expandable gutter bracket.

Fig. 1C is a schematic side view of the connection of the first section and the second section.

25 Fig. 1D is a schematic side view of the expandable gutter bracket upon coupling of the gutter attachment section to the building attachment section.

Fig. 2A is a schematic diagram of the two piece construct of the expanded gutter bracket.

Fig. 2B is a schematic diagram of the two piece construct of the expanded gutter bracket upon sliding movement between the gutter attachment section and the building attachment section.

Fig. 2C is a schematic diagram of the two piece construct of the expanded gutter bracket upon sliding movement between the gutter attachment section and the building attachment section.

Fig. 3A is a schematic diagram of the expandable gutter bracket in a retracted position in attachment with a gutter.

Fig. 3B is a schematic diagram of the expandable gutter bracket expanded in attachment with the gutter.

Fig. 4 is a schematic diagram of an alternate embodiment of the expandable gutter bracket.

Fig. 5A is a schematic diagram of the gutter bracket in a retracted position in attachment with a gutter.

Fig. 5B is a schematic diagram of the expandable gutter bracket expanded in attachment with the gutter.

Fig. 6A is a schematic side view of a support accessory.

Fig. 6B is a schematic side view of a support accessory formed integrally with the first section of the expandable gutter bracket of the present invention.

Fig. 6C is a schematic side view of a support accessory attached to the first section of the expandable gutter bracket of the present invention.

#### Detailed Description

Reference will now be made in greater detail to a preferred embodiment of the invention, an example of which is illustrated in the accompanying drawings. Wherever possible, the same reference numerals will be used throughout the drawings and the description to refer to the same or like parts.

Figs. 1A through 1D illustrate expandable gutter bracket 10 in accordance with the teachings of the present invention. Expandable gutter bracket is formed of a two piece construct of gutter attachment section 12 and building attachment section 14.

Gutter attachment section 12 and building attachment section 14 can be coupled to one

another to provide sliding movement between gutter attachment section 12 and building attachment section 14. Gutter attachment section 12 includes protrusion 13 at end 15. Building attachment section 14 includes mounting portion 16 at end 17. For example, mounting portion 16 can be a mounted screw for attachment of mounting portion 16 to a building surface (not shown).

Figs. 2A-2B illustrate operation of expandable gutter bracket 10. Expandable gutter bracket 10 is fitted into gutter 18 in a retracted position extending in a portion of the gutter, as shown in Fig. 2A. Protrusion 13 is received in lip 19 of gutter 18. For example, the retracted position has a reduced length  $L_1$  of the distance between end 15 of gutter attachment section 12 and end 17 of building attachment section 14. After insertion of expandable gutter bracket 10 into gutter 18, expandable gutter bracket 10 expands to expanded length  $L_2$  of the distance between end 15 of gutter attachment section 12 and end 17 of building attachment section 14, as shown in Fig. 2B.

In one embodiment, the reduced length  $L_1$  can be in the range of about 3 inches to about 4 inches to be able to easily be adjusted into a gutter of a standard size having a length  $L_2$  in the range of about 5 inches to about 6 inches. It will be appreciated that length  $L_1$  and  $L_2$  can be varied to fit any size gutter.

Gutter attachment section 12 can include one or more tracks 20 for receiving building attachment section 14. Alternatively, building attachment section 14 can include one or more tracks 22 for receiving gutter attachment section 12, as shown in Figs. 3A-3C. Gutter attachment section 12 can slide along tracks 22 for forming a retracted portion and an extended position.

In an alternate embodiment, expandable gutter bracket 30 includes a pivoting building attachment section 32 pivotally coupled to gutter attachment section 12, as shown in Fig. 4. Pivoting building attachment section rotates from a first position having an angle position  $A_1$  with gutter attachment section 12 to a second linear position. Expandable gutter bracket 30 has a reduced length  $L_1$  in the first position as shown in Fig. 5A and an expanded length  $L_2$  in the second position as shown in Fig. 5B.

After expandable gutter bracket 30 is expanded mounting portion 16 is attached to building attachment section 14 to attach expandable gutter bracket 10, 30 to a surface of a

building, such as fascia board. It will be appreciated that other mechanism for attaching gutter attachment section to building attachment section in an expandable manner can be used with the teachings of the present invention.

Figs. 6A through 6C illustrate an alternate embodiment of a support accessory 40 which can be combined with expandable gutter bracket 10. Support accessory 40 comprises upward extension 42. One or more support arms 44 can protrude from upward extension 42. Support arms 44 are adapted to receive cover 45 for a gutter. Examples of covers for gutters are described in U.S. Patent Nos. 6,672,012 and 4,404,775, hereby incorporated by reference in their entireties into this application. In one embodiment, support accessory 40 is formed integrally with gutter attachment section 12, as shown in Fig. 6B. For example, upward arm extension 42 and arms 44 can be punched out of gutter attachment section 12. Alternatively, support accessory 40 is removably attached to gutter attachment section 12 with mounting means 46, as shown in Fig. 5C. For example, mounting means 46 can be a screw, bracket, nail or other conventional mounting means known in the art.

It is to be understood that the above-described embodiments are illustrative of only a few of the many possible specific embodiments which can represent applications of the principles of the invention. Numerous and varied other arrangements can be readily devised in accordance with these principles by those skilled in the art without departing from the spirit and scope of the invention.